

Claims

[c1]

1. A multi-tube fluorescent discharge lamp, comprising: A first tube which is an inner most tube; A second tube, which is slightly larger than the first tube; and plural cathode, which are fixed on the two pair of electrodes and connected to the both sides of the first tube respectively; wherein the tubes are constructed of different caliber in coaxial, coating phosphor on the outer layer surface of the first tube and inner layer surface of the second tube, by isolating, perforating and blocking the discharge path, forming a successive discharge path, in the discharge chamber is in a state of vacuum and with little Hg.

[c2]

2. The fluorescent lamp of claim 1, wherein said the discharge path is constructed of the isolator which located nearby the middle of the first tube, the through-holes which located nearby both ends of the first tube, the plural cathode which located in the both sides of the first tube respectively, the both ends of two tubes are sealed, forming a successive discharge path.

[c3]

3. The fluorescent lamp of claim 1, wherein further comprising multiple plural number tubes with the total tube number N ($N = \text{even}$), isolating from the first tube to the $(N-1)$ th tube approach the middle of the tubes; forming through-hole at the odd number tube from the first tube to the $(N-1)$ th tube approach the both ends of the tubes, forming through-hole at the even number tube from the second tube to the $(N-2)$ th tube approach the both ends of the isolator, coating phosphor on the outer and inner layer surface from the second tube to the $(N-1)$ th tube, and the inner layer surface of the N th tube, and outer layer surface of the first tube, the both ends of all tubes are sealed, forming a successive discharge path.

[c4]

4. A multi-tube fluorescent discharge lamp, comprising: A first tube which is an inner most t second tube, which is slightly larger than the first tube; A third tube, which is slightly larger than the second tube; and plural cathode which are fixed on the two pair of electrodes and connected tot he both sides of the first tube respectively; wherein the tubes are constructed of

different caliber in coaxial, coating phosphor on the outer and inner layer surface of the first tube, the second tube and the inner layer surface of the third tube, by isolating, perforating and blocking the discharge path, forming a successive discharge path, in the discharge chamber is in a state of vacuum and with little Hg.

[c5] 5. The fluorescent lamp of claim 4, wherein said the discharge path is constructed of the isolators which located nearby the middle of the first tube, the second tube, the through-holes which located nearby both ends of the second tube, the through-holes which located nearby both ends of the isolator of the first tube, the plural cathode which located in the both sides of the first tube respectively, the both ends of three tubes are sealed, forming a successive discharge path.

[c6] 6. The fluorescent lamp of claim 4, wherein further comprising a fourth tube, which is slightly larger than the third tube; and a fifth tube which is slightly larger than the fourth tube.

[c7] 7. The fluorescent lamp of claim 6, wherein said the discharge path is constructed of the isolators which located nearby the middle of the first tube, the second tube, the third tube, and the fourth tube, the through-holes which located nearby both ends of the second tube, the fourth tube, the through-holes which located nearby both ends of the isolator of the first tube, the third tube, the plural cathode which located in the both sides of the first tube respectively, the both ends of five tubes are sealed, forming a successive discharge path.

[c8] 8. The fluorescent lamp of claim 6, wherein further comprising multiple plural number tubes with the total tube number N ($N = \text{odd}$), isolating from the first tube to the $(N-1)$ th tube to approach the middle of the tubes. Forming through-hole at the even number tube from the second tube to the $(N-1)$ th tube to approach the both ends of the tubes, forming through-hole at the odd number tube from the third tube to $(N-2)$ th tube to approach the both ends of the isolator, coating phosphor on the outer and inner layer

surface From the first tube to the (N-1)th tube and the inner layer surface of the Nth tube, both ends of all tubes are sealed, forming a successive discharge path.

[c9] 9. A multi-tube fluorescent discharge lamp, comprising: two first tubes are the inner most tube; A second tube, which is slightly larger than the first tube; A third tube, which is slightly larger than the second tube; and plural cathode which are fixed on the two pair of electrodes and connected to the one sides of the two first tube and installed oppositely in the second tuber; wherein the tubes are constructed of different caliber in coaxial, coating phosphor on the outer layer surface of the first tube, the inner and outer layer surface of the second tube and the outer layer surface of the third tube, by isolating, perforating and blocking the discharge path, forming a successive discharge path, in the discharge chamber is in a state of vacuum and with little Hg.

[c10] 10. The fluorescent lamp of claim 9 wherein said the discharge path is constructed of the isolators which located nearby the middle of the second tube, the through-holes which located nearby both ends of the second tube, the plural cathode which are fixed on the two pair of electrodes and connected tot he one sides of the two first tube and installed oppositely in the second tube to approach the isolator, the both ends of three tubes are sealed, forming a successive discharge path.

[c11] 11. The fluorescent lamp of claim 9 wherein said further comprising multiple plural number tubes with the total tube number N ($N = \text{odd}$), isolating from the second tube to the (N-1)th tube to approach the middle of the tubes. Forming through-hole at the even number tube from the second tube to the (N-1)th tube to approach the both ends of the tubes, forming through-hole at the odd number tube from the third tube to (N-2)th tube to approach the both ends of the isolator, coating phosphor on the outer layer surface of the first tube and the inner and outer layer surface from the second tube to the (N-1)th tube and the inner layer surface of the Nth tube, plural cathode

which are installed oppositely in the second tube to approach the isolator, both ends of all tubes are sealed, forming a successive discharge path.

[c12] 12. The fluorescent lamp of claim 3, 8 or 11 wherein the second tube is slightly larger than the first tube, the third tube is slightly larger than the second, and the Nth tube is slightly larger than the (N-1)th tube, the (N-1)th tube is slightly larger than the (N-2)th tube.

[c13] 13. The fluorescent lamp of claim 2,3,5,7,8,10 or 11 wherein said the through-holes which are formed on the circumference at the position of plural number, extruding through-hole with plural number.

[c14] 14. The fluorescent lamp of claim 1,4 or 9 wherein said the discharge tube are transparent glass tube.

[c15] 15. The fluorescent lamp of claim 1,4 or 9 wherein said the discharge tube are transparent glass tube of different colors.

[c16] 16. The fluorescent lamp of claim 1,4 or 9 wherein said the cathode is fixed on the electrode pair of a stem which includes a pipe and a hole that communicated with the pipe.

[c17] 17. The fluorescent lamp of claim 1,4 or 9 wherein said the layer surface is coated with various fluorescent material of different color temperature on the different layer surface.

[c18] 18. The fluorescent lamp of claim 1,4 or 9 wherein said the cathode which is straight cathode or ring cathode.

[c19] 19. The fluorescent lamp of claim 1,4 or 9 wherein said the cathode is cold cathode or hot cathode.

[c20] 20. The fluorescent lamp of claim 1,4 or 9 wherein the discharge tube filled in little Ar.

[c21] 21. The fluorescent lamp of claim 1,4 or 9 wherein also comprise plural base of lamp with plural terminal.

22. The fluorescent lamp of claim 21 wherein said the plural terminal of the base connected to the electrodes respectively.

Page20 of 41